

REMARKS

Applicant thanks the Examiner for identifying allowable subject matter in claims 7 and 8. Claims 7 and 8 have been canceled and rewritten as currently added claims 14 and 15 to include all of the limitations of the claims from which they previously depended. It is respectfully submitted that these claims are in condition for allowance.

In the Office Action dated February 13, 2004, claims 1 and 4 were rejected under 35 U.S.C. § 102(e) as allegedly anticipated by U.S. Patent No. 6,459,688 to Bursztejn et al. (hereinafter "Bursztejn"); claims 9-11 and 13 were rejected under 35 U.S.C. § 102(e) as allegedly anticipated by U.S. Patent No. 6,643,522 to Young (hereinafter "Young"); and claims 2-3 and 5-6 were rejected under 35 U.S.C. § 103(a) as allegedly obvious over Bursztejn in view of U.S. Patent No. 5,781,540 to Malcolm et al. (hereinafter "Malcolm"). Applicant respectfully traverses the rejections of record.

Rejections under 35 U.S.C. § 102(e)

As set forth in pending claim 1, Applicant's invention is a method for operating a dual-mode mobile unit arranged to transmit and receive signals using first and second wireless protocols, comprising the steps of:

operating said mobile unit under said first wireless protocol;
reserving a transmission time interval in a frame of said first
wireless protocol; and
operating said mobile unit under said second wireless protocol
during said reserved time interval.

Bursztejn is directed to a registration method used for registering at least one dual mode mobile station with an associated private base station, wherein the modes are "cordless" and "cellular" modes. (See Bursztejn, Abstract). As an initial matter, Bursztejn is directed to a very different purpose from that of the present invention.

Bursztejn uses frequency hopping between the dual mode mobile station and private base station to reduce the risk of interference between cordless and cellular transmissions. (*See* Bursztejn, col. 3, lines 63-65). While both the present invention and Bursztejn are directed in part to reducing interference between wireless protocols, they use distinct approaches for doing so.

According to the system of Bursztejn, “[a]s soon as the registration procedure has been completed, the dual mode mobile station (MMS) operates in ‘cordless’ mode and receives or transmits calls via the private base station (DBS) *and no longer via the cellular system*, thus benefiting from public telephone network rates which are cheaper.” (Bursztejn, col. 8, lines 3-8, emphasis added)). “It is important to note that the registration of the dual mode mobile station with the private base station constitutes a stage, executed once and for all, prior to operating in ‘cordless’ mode.” (Bursztejn, col. 2, lines 37-40)). “[F]rom the moment the dual mode mobile station is registered [to either cordless or cellular base stations], a plurality of successive calls can be set up and a plurality of conversations can be processed [with the single base station], without requiring a new registration each time.” (Bursztejn col. 2, line 44). Thus, Bursztejn is essentially and effectively a single-mode system, as compared with the present invention, after registration has been completed, and is not used during normal operation for communication in the format of a single wireless protocol the data of two or more different wireless network protocols.

In this sense, Bursztejn is quite different from the present invention, which is directed towards true dual-mode communication. (“[M]obile unit 10 is arranged to *communicate using both standards* and to coordinate communications using the Bluetooth standard with the communications using the 802.11 standard.” (Specification, p. 7, lines 12-15, emphasis added)).

The present invention is directed to true dual-mode communication which is carried out continuously, as opposed to the mode-switching registration process of Bursztejn. (See Specification, p. 11, lines 17-18; "The sequence of interrupting 802.11 traffic for Bluetooth activity may be repeated at a data cycle which can be selected according to the 802.11 and Bluetooth radio activity.").

It is alleged on pp. 2-3 of the Office Action that Bursztejn, at col. 8, lines 33-51, discloses each of the limitations of claims 1 and 4. Applicant respectfully disagrees.

The cited portion of Bursztejn relates to an implementation of the registration method used for registering the dual mode mobile station with the private base station. (See Bursztejn, col. 8, lines 33-36). Bursztejn fails to disclose or suggest "reserving a transmission time interval in a frame of said first wireless protocol." As described above, the scheme of Bursztejn relies on a preset frequency hopping protocol between the mobile and base station, "based on two elements specific to and known by the private base station (DBS) and the dual mode mobile base station (MMS):... a preset frequency hopping law ... and preset uplink start-up frequency." (See Bursztejn, col. 6, lines 49-59). The cited portion of Bursztejn refers to known TDMA systems, in which communications slots are preset within time frames based on a given algorithm - no *reserving* of time slots is necessary. The present invention, however, includes the step of *reserving a transmission time interval in a frame*, which step is neither performed nor required in the system of Bursztejn.

This difference is not surprising considering the purpose of Bursztejn - the only overlap of cordless and cellular communications in Bursztejn occurs during the registration, and thereafter the system no longer operates in two modes. ("As soon as the registration procedure has been completed, the dual mode mobile station (MMS) operates in 'cordless' mode and

receives or transmits calls via the private base station (DBS) *and no longer via the cellular system*, thus benefiting from public telephone network rates which are cheaper." (Bursztejn, col. 8, lines 3-8)). It is clear that the object of Bursztejn is to retain utility of a cellular telephone radio, without multiplexing a separate cordless radio, for short-range cordless connectivity to the public switched telephone network. Bursztejn is directed to using a short range base station to emulate the physical layer (radio communications link) of a cellular base station while perhaps using existing cordless telephone or cellular telephone logical protocols (for example, DECT or CT2) - essentially software. Doing so avoids the added cost of multiplexing two radios and ending up with "the sum of the prices of a cordless mobile station plus a cellular mobile station." (Bursztejn, col 2, line 10).

Furthermore, dependent claim 4 includes the additional limitation of operating said mobile unit under said second wireless protocol to act as a master unit for at least one slave unit operating under said second wireless protocol, reserving a transmission time interval in a frame of said first wireless protocol and controlling said slave unit using said second wireless protocol to transmit using said second wireless protocol during said reserved time interval. The cited portion of Bursztejn fails to disclose or suggest this additional limitation as well.

Claims 9-11 and 13 were rejected under 35 U.S.C. § 102(e) as allegedly anticipated by Young. Applicant respectfully traverses these rejections.

As set forth in pending claim 9, the present invention includes method for operating a dual mode mobile unit comprising the steps of, *inter alia*,:

providing a digital processor programmed to process signals for said first and second protocols, responsive to received digital signals in a first protocol frame format and providing output digital transmission signals in said first protocol frame format;

converting said output first and second protocol baseband signals to said received digital signals in said first protocol frame format; and
converting said output digital transmission signals from said first protocol frame format to said first or second protocol baseband signals.

It is asserted in the Office Action that Young discloses or suggests all of the limitations of claim 9. Applicant respectfully disagrees.

The cited portion of Young is directed to a transceiver front end circuit for co-located radios. (Office Action, p. 3-4, citing Young, Fig. 51 col. 5, line 6 - col. 7, line 6). Instead of using one antenna for each radio, which may result in desensitization of the receiver, a circulator is used to allow sharing of one front-end by both radios. (See Young, col. 6, lines 55-60). The cited portion of Young provides no discussion of the claimed invention as recited in claim 9. In particular, Young fails to disclose or suggest at least the steps of "converting said output first and second protocol baseband signals to said received digital signals in said first protocol frame format" and "converting said output digital transmission signals from said first protocol frame format to said first or second protocol baseband signals." In fact, Young teaches precisely the opposite - rather than converting digital signals of a first protocol frame format to signals of a first or second protocol, Young distributes the same received front-end signals to two different radios using a circulator 52 - thus, no conversion is performed. The cited portion of Young provides no discussion of conversion whatsoever, much less the conversion as recited in claim 9.

As set forth in pending claim 10, Applicant's invention is a mobile unit that is arranged to operate according to two protocols. First and second RF modules are provided for operating according to the first and second protocols, each responsive to baseband signals to be transmitted and each providing output baseband signals on reception. A common digital processor is provided for processing signals according to both the first and second protocols. An interface

unit is provided between the processor and the RF modules for processing between the baseband signals of the RF module and the digital signal processor.

As is evident from the specification, the claimed interface unit is the configurable bit stream processor 42, described on pages 8 through 10 of the specification. Further the claimed digital signal processor is digital processor module 18, which includes processor 56, and which is described at pages 9-10 as performing the MAC level processing for both formats.

The cited portion of Young fails to disclose or suggest a configurable bit stream processor as described in the specification and recited in claim 10 as an "interface unit." The interface unit "is arranged to process the serial bit streams for both the Bluetooth and 802.11 communications." (Specification, p. 8, line 17). Indeed, as shown in Fig. 5 of Young, Young is directed to using two separate baseband processors 68 and 70 for the separate radios A and B. Accordingly, no such interface unit is necessary. This distinction is expected since, as described above, the system of Young distributes the same received front-end signals to two different radios using a circulator 52 - thus, no digital protocol conversion is performed, nor is such conversion necessary. A system having two separate radios (such as the system of Young) thus cannot disclose or suggest the claimed features. Accordingly, Young fails to disclose or suggest at least these limitations of claim 10 and thus cannot anticipate claim 10.

Claim 11 depends from claim 10. For at least the reasons set forth above, Young fails to disclose or suggest all limitations of claim 11, and thus cannot anticipate claim 11.

Claim 13 is directed to a dual mode mobile unit for operating according to first and second wireless protocols. The mobile unit includes, *inter alia*,

"an interface unit for receiving baseband signals from said first and second RF modules and supplying corresponding digital signals to said processor, and for receiving digital signals from said processor and supplying first and second corresponding baseband signals to said first and second RF modules respectively,

wherein said interface unit receives output baseband signals from said second RF module and supplies said corresponding digital signals to said digital processor in a first protocol frame format, and receives digital signals from said digital processor in said first protocol frame format and supplies corresponding baseband signals to said second RF module according to said second wireless protocol."

As discussed above with respect to claim 10, the cited portion of Young fails to disclose or suggest at least this limitation of claim 13. For at least this reason, Young cannot anticipate claim 13.

Rejections under 35 U.S.C. § 103(a)

Claims 2-3 and 5-6 were rejected under 35 U.S.C. § 103(a) as allegedly obvious over Bursztejn in view of Malcolm. Applicant respectfully traverses these rejections.

First, claims 2 and 3 depend from independent claim 1, and claims 5 and 6 depend from independent claim 4. For at least the reasons set forth above, Bursztejn in combination with Malcolm fails to disclose or suggest all limitations of independent claims 1 and 4. Accordingly, the references viewed in combination cannot render claims 2-3 and 5-6 obvious.

Furthermore, as noted by the Examiner, Bursztejn fails to disclose the limitation of claims 2 and 5 of operating said mobile unit to transmit using said first wireless protocol during an initial portion of said reserved time interval. (Office Action, p. 6). The Examiner cites Malcolm as teaching these limitations. (See Malcolm, col. 9, lines 44-67). Applicant respectfully disagrees.

Malcolm is directed to a device and a method for communicating in a mobile satellite communication system. (Malcolm, Abstract). The cited portion of Malcolm refers to the transmission of a preamble sequence within a time slot in a TDMA system. Malcolm fails to disclose or even remotely suggest operating according to two different wireless communication

protocols, and indeed, only relates to a single communications protocol. Accordingly, Malcolm cannot possibly disclose or suggest "operating said mobile unit to transmit using said first wireless protocol during an initial portion of said reserved time interval" in conjunction with the limitation of claim 1 of "operating said mobile unit under said second wireless protocol during said reserved time interval." Thus the mobile of claims 3 and 5 is operating using two different wireless protocols during the reserved time interval. Accordingly, for at least this additional reason, the references in combination cannot render claims 2 and 5 obvious. For similar reasons, the references in combination cannot render claims 3 and 6 obvious.

Applicant respectfully submits that these claims 2-3 and 5-6 are non-obvious in view of the cited combination of references, and accordingly that these claims are in condition for allowance.

Furthermore, the combination of Bursztejn and Malcolm is improper. As the Court of Appeals for the Federal Circuit has held:

"It has not been shown that a person of ordinary skill, seeking to solve a problem of fastening a hose clamp, would reasonably be expected or motivated to look to fasteners for garments. The combination of elements from non-analogous sources, in a manner that reconstructs the applicant's invention only with the benefit of hindsight, is insufficient to present a *prima facie* case of obviousness. There must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge can not come from the applicant's invention itself."

In re Oetiker, 24, U.S.P.Q.2d 1443, 1447, 977 F.2d 1443, 1447 (Fed. Cir. 1992).

There is no "reason, suggestion, or motivation" in the prior art such that one of ordinary skill in the art would make the combinations which form the basis of the rejections under 35 U.S.C. § 103(a) in the Office Action. This combination of elements between non-analogous sources, i.e., single-protocol satellite communications systems, and "dual-mode" cordless and cellular communications systems, is apparently improperly made only with the benefit of

hindsight in view of the present application. In much the same way that one seeking to solve a problem of "fastening a hose clamp" would not "reasonably be expected or motivated to look to fasteners for garments" for a solution, it is equally unlikely that one seeking to solve a problem in single-mode satellite systems would reasonably look to "dual-mode" cordless and cellular phone systems for limiting telephone service costs. *See id.* Accordingly, because there is no teaching or suggestion towards the cited combination in the prior art, in conformity with the law as recited by the Federal Circuit, these references are not properly combined. Applicant therefore respectfully submits that the rejections of claims 2-3 and 5-6 under 35 U.S.C. § 103(a) are improper for at least this additional reason, and submits that these claims are in condition for allowance.

CONCLUSION

In view of the foregoing amendment and remarks, favorable reconsideration and allowance of claims 1-6, 9-11 and 13-15 are respectfully solicited. In the event that the application is not deemed in condition for allowance, the examiner is invited to contact the undersigned in an effort to advance the prosecution of this application.

Respectfully submitted,



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